Project Introduction

Loop heat pipes are commonly used for heat rejection radiators above a few hundred watts. The LHP condener tubing is embedded in composite panels which are manually deployed. By making the LHP condenser tubing out of shape memory alloy tubing, the radiator becomes self deploying and self contained. It will passively deploy when the payload components begin producing significant heat. This not only eliminates the deployment mechanisms and controls, but also provides more flexible stowing arrangement for the radiators. Very small satellites and spacecraft can now have deployable radiators.

Primary U.S. Work Locations and Key Partners

Organizations Performing Work	Role	Type	Location
⭐Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Thermacore, Inc.	Supporting Organization	Industry	Lancaster, Pennsylvania

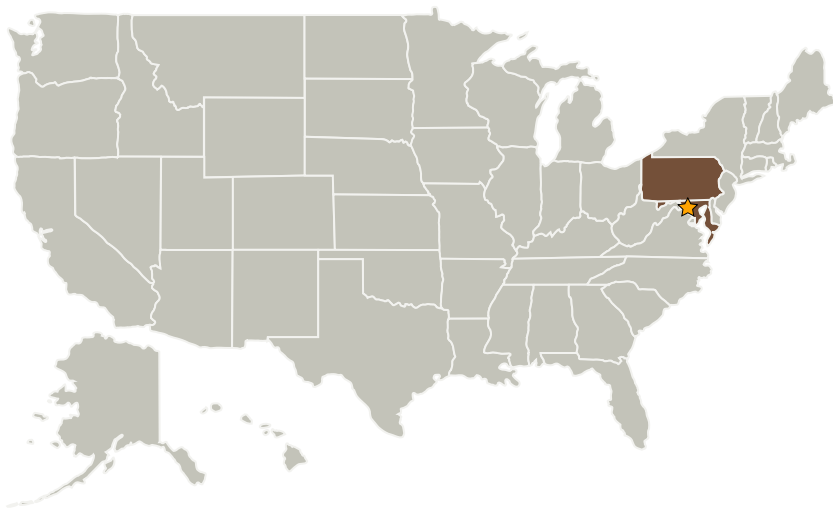Self Deploying Nitinol LHP Radiator for Small Spacecraft, Phase I

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Primary U.S. Work Locations	
Maryland	Pennsylvania

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
  └ TX14.2 Thermal Control Components and Systems
    └ TX14.2.3 Heat Rejection and Storage